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EXAMINER

SHERALI, ISHRATI

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,186

Applicant(s)

FAN ET AL.

Examiner

Sherali Ishrat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,8,16,19 and 22 is/are rejected.
- 7) ☐ Claim(s) 2-7,9-15,17 and 18, 20-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10122001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 16, 19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Oomura et al. (US 6,504,955).

Regarding claim 1, Oomura discloses image segmentation process (Oomura, in col 13, lines 24-25, states "In figure 13, the drawing objects included in the image of one page are sequentially inputted and the band list are formed" and in col. 13, lines 27-32 "When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated". This separation of character train objects and character train objects which are overlap with other object is image segmentation process in the system of Oomura);

segmenting an image into main background (Oomura, in col 10, lines 30-33, states "Figure 10A and 10B shows examples in the where the overlap character trains and figures has to be considered and the case where there is no

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need to consider such an overlap” and in col. 10, lines 38-40, Figure 10A and 10B reference numerals 71 and 72 denote recording paper and color of the paper becomes the background”. Oomura shows color of the paper is segmented as the main background);

a local background, and first object (Oomura in col. 13, lines 27-32 states “When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated”. In the system of Oomura the objects in which it is necessary to consider the overlap corresponds to a local background and the first object such as in figure 10B block 719 shows object CD has local background),

the first object is on either the main background or the local background (Oomura in col. 13, lines 27-32 states “When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated”. In the system of Oomura character train object in which there is no need to consider the overlap corresponds to the first object is on the main background such as shown in figure 10B block 716 BCD on the paper background and objects in which it is necessary to consider the overlap corresponds to the first object is on the local background such as shown in figure 10B block 719 object CD is on the local background).

Regarding claim 16, Oomura discloses image segmentation (Oomura, in col 13, lines 24-25, states “In figure 13, the drawing objects included in the image

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of one page are sequentially inputted and the band list are formed” and in col. 13, lines 27-32 “When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated”. The separation of character train objects and the character train objects, which are overlap with other objects corresponds to image segmentation process);

identifying a first object on the main background (Oomura, in col 10, lines 30-33, states “Figure 10A and 10B shows examples in the where the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap” and in col. 10, lines 38-40, Figure 10A and 10B reference numerals 71 and 72 denote recording paper and color of the paper becomes the background”. In the system of Oomura, the case where there is no need to consider an overlap corresponds to identifying a first object on the main background such as shown in figure 10B block 716 BCD on the paper background);

classifying the first object into one class of a group of classes consisting of text, picture and a composite object (Oomura, in col. 10, lines 30-33, states “Figure 10A and 10B shows examples in the where the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap”. In the system of Oomura overlap character trains and figures corresponds to classification of the first object into composite object such as shown in figure 10B block 719 object CD is on the local background [composite object , object CD on the local background])

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if the first object is classified as a composite object, identifying a local background for the first object (Oomura, in col. 10, lines 30-33, states "Figure 10A and 10B shows examples in which the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap" and in col. 11, lines 20-22, "In the case the character train 718 [Figure 10B] and a bit pattern 719 are overwritten . In the system of Oomura overlap character trains and figures corresponds to the first object is classified as a composite object and the bit pattern is a local background).

Regarding claim 19, Oomura discloses identifying a second object on the background (Oomura, in col 10, lines 30-33, states "Figure 10A and 10B shows examples in the where the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap" and in col. 10, lines 38-40, Figure 10A and 10B reference numerals 71 and 72 denote recording paper and color of the paper becomes the background". In the system of Oomura, the case where there is no need to consider an overlap corresponds to identifying a first object , second object such as shown in figure 10B block 716 BCD on the paper background);

classifying the second object into one class of a group of classes consisting of text, picture and a composite object (Oomura in col. 13, lines 27-32 states "When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated". In the system of Oomura the objects in which it is

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necessary to consider the overlap corresponds to classifying objects [first, second objects] as composite object),

if the second object is classified as a composite object, identifying a local background for the second object (Oomura, in col. 10, lines 30-33, states "Figure 10A and 10B shows examples in which the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap", In the of Oomura overlap character train corresponds to composite object and in col. 11, lines 20-22, "In the case the character train 718 [Figure 10B] and a bit pattern 719 are overwritten . In the system of Oomura overlap character trains and figures corresponds to the second object is classified as a composite object and the bit pattern is a local background and examiner notes that Oomura is showing different cases of composite [overlap] objects and in the system of Omura this particular case can correspond to first, second or third objects).

Regarding claim 22, Omura discloses if the first object is classified as composite object, determining if the local background is a sweep (Oomura, col. 12, lines 46-47, states "The character train object [first object] which are overlapped to the target object" . This corresponds to if the first object is classified as composite object, determining if local background is a sweep [target object]),

if the local background is a sweep reclassifying the first object as a picture object (Oomura, col. 12, lines 46-47, states "The character train object [first object] which are overlapped to the target object [sweep] and those objects are

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outputted as graphics objects". This corresponds to if the local background is a sweep reclassifying the first object as a picture object).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 USC 103 as being unpatentable over Oomura et al. (US 6,504,955) in view of Zlotnick et al. (US 5,737,438).

Regarding claim 8, Oomura image segmentation (Oomura, in col 13, lines 24-25, states "In figure 13, the drawing objects included in the image of one page are sequentially inputted and the band list are formed" and in col. 13, lines 27-32 "When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated". This separation of character train objects and character train objects which are overlap with other object is image segmentation process in the system of Oomura);

performing low resolution segmentation of an image (Oomura, in col 13, lines 24-25, states "In figure 13, the drawing objects included in the image of one page are sequentially inputted and the band list are formed" and in figure 3, block 10 and 17, Oomura shows CRT display and printer, resolution of the

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image is constrained due to dynamic range of display device therefore Oomura is performing segmentation as in col. 13, lines 27-32 in low image resolution).

into main background (Oomura, in col 10, lines 30-33, states "Figure 10A and 10B shows examples in the where the overlap character trains and figures has to be considered and the case where there is no need to consider such an overlap" and in col. 10, lines 38-40, Figure 10A and 10B reference numerals 71 and 72 denote recording paper and color of the paper becomes the background". Oomura shows color of the paper is segmented as the main background); and

first object (Oomura in col. 13, lines 27-32 states "When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated". In the system of Oomura the character train objects in which there is no need to consider the overlap is first object);

the first object is on either the main background or the local background (Oomura in col. 13, lines 27-32 states "When the band lists are formed, the character train objects in which there is no need to consider the overlap and the objects in which it is necessary to consider the overlap are separated". In the system of Oomura character train object in which there is no need to consider the overlap corresponds to the first object is on the main background such as shown in figure 10B block 716 BCD on the paper background and objects in which it is necessary to consider the overlap corresponds to the first object is on the local

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background such as shown in figure 10B block 719 object CD is on the local background);

Oomura however have not disclosed refining the borders shared by any two of the main background, and the first object at the original resolution .

In the same field of endeavor, Zlotnick discloses refining the borders shared by object and background to original resolution (Zlotnick, in col. 4, lines 56-60, shows reducing the original image resolution, in col. 5, lines 6-15, Zlotnick shows segmenting label [object] and background and in col. 7, lines 49-54, Zlotnick, shows increasing the image resolution to the original image).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to refine the borders shared by background and the object at the original resolution as shown by Zlotnick in the system of Oomura by lowering the image resolution shown in figure 10A and 10B before the steps of image segmentation and enhancing or increasing the image resolution after the step of image segmentation because such a process of performing image processing in the lower resolution than the original image resolution require lesser time to process the image thereby increases the speed of image processing.

Allowable Subject Matter

5. Claims 2-7, 9-15 and 17-18 and 20-21 are objected as being dependent on reject claim but would allowable if rewritten in independent form including limitations of the base claim and any intervening claims.

Communication

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 703-308-9589. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ishrat', is written over the text of the previous paragraph.

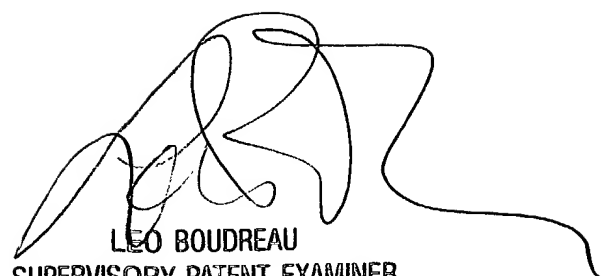
Ishrat Sherali

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Patent Examiner

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October 22, 2004



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